

Climatological Data for October, 1909.

DISTRICT No. 4, LAKE REGION.

Prof. HENRY J. COX, District Editor.

TEMPERATURE.

The month, as a whole, in Climatological District No. 4 was considerably cooler and drier than usual. Over the eastern portions of the district there was a marked deficiency in sunshine during the latter half of the month, and an increased number of rainy days, although the amount of rainfall was small. Nearly normal conditions, in respect to sunshine and number of days with precipitation, prevailed over the western sections.

The deficiency in temperature was greatest in those sections south of the forty-third parallel, where it amounted to nearly 5° , and extreme departures occurred as follows: Coldwater, Mich., -6.4° ; Plymouth, Mich., -7.1° ; South Bend, Ind., -6.4° ; Cleveland (2), Ohio, -6.1° ; Ottawa, Ohio, -6.5° ; Elba, N. Y., -6.4° ; and Westfield, N. Y., -6.6° . Going northward from the forty-third parallel, temperature more nearly approached the normal, the deficiency becoming only about 1° in the Upper Peninsula of Michigan.

The weather was mild during the first decade of the month, as a warm area passed across the district, culminating on the 6-9th, when the highest temperatures of October, 1909, were recorded. During this time temperatures of over 80° occurred in practically all portions of the district, the absolute maximum being 87° at Gladwin, Mich., on the 9th.

This period of warm weather was followed by a sharp cool wave which appeared in the western sections on the 11th and rapidly overspread the entire district. Killing frosts were general in the western Lake region on the morning of the 12th, and by the 20th had occurred at nearly all stations to the eastward. The cool period extended to near the end of the month, the lowest temperatures occurring generally on the 28th to 30th. Readings of 8° were made at Floodwood and Stevens Mine, Minn., on the 28th, and of 10° at Nehasane and Old Forge, in the highlands of New York, on the 30th; while temperatures of from 20° to 25° occurred at many stations in the southern portions of the district not immediately on the lake shores.

PRECIPITATION.

With the exception of localities in the region of western Lake Superior, northern Indiana, and western Ohio, where the amount of precipitation for the month was slightly in excess of the normal, a deficiency of between 1 and 2 inches prevailed generally over the district. The amounts of precipitation in the individual storms were uniformly light. The greatest 24-hour fall of the month was but 1.80 inches at Ironwood, Mich., on the 21st, and as a rule the greatest falls in any twenty-four hours were considerably less than 1 inch.

There was practically no precipitation over that portion of the district west of New York State during the first ten days, but rain and snow set in with the sharp drop in temperature at the close of this period, and precipitation was frequent over the central and eastern sections during the remainder of the month. Over the extreme western sections there were two distinct periods of precipitation, from the 10th to 15th and from the 20th to 23d, respectively.

Snow was general from the 11th to 13th, being very heavy in northern Wisconsin, the Upper Peninsula of Michigan, and Minnesota, where depths of from 10 to 22 inches were reported. At Buffalo, N. Y., 6 inches of snow fell on the morning of the 13th, but elsewhere throughout the district the snowfall was light, being generally less than 1 inch.

As a consequence of the light precipitation during the past season, the rivers of Michigan, Ohio, and Minnesota were reported as somewhat lower than usual.

TORNADO AT ERIE, PA.

With one exception, no damaging storms occurred during the month. A tornadic disturbance of moderate energy, how-

ever, passed about 25 miles south of Erie, Pa., on October 21, causing a property loss of approximately \$150,000, and seriously injuring eight persons. The description following of this tornado was furnished by Mr. George R. Oberholzer, Local Forecaster, in charge of the local office of the Weather Bureau at Erie, Pa.:

The parent disturbance was a low pressure area (barometer 29.60 inches) whose center moved from the Lake Superior region to a point north of Georgian Bay during the day. With the pressure over Kentucky and Virginia greater than 30.10 inches, comparatively steep gradients resulted over Ohio, Pennsylvania, and the Lake region, and caused brisk to high westerly winds. Showers were general in the Lake States during the 21st, and a series of thunderstorms moved from eastern Ohio northeastward over Pennsylvania and western New York State during the afternoon.

At Erie a thunderstorm was observed moving eastward over the lake north of the station at 3:30 p. m., attended by a considerable electric display. A heavier storm moving in the same direction, but more to the southward, soon followed. The thundercloud appeared unusually threatening, due to its boiling and rolling, and the outrushing squall wind gave a velocity of 30 miles an hour from the south at 4:05 p. m., as recorded at the Erie station. Hailstones, varying in diameter from two-tenths to six-tenths of an inch, fell from 4:25 to 4:39 p. m., and 0.18 inch of rain was recorded from 4:08 to 4:45 p. m. The storm was preceded for five hours by a temperature of 64° , and it fell only 6° during its passage. The temperature then rose to 60° at 5 p. m., after which it fell slowly until midnight, when another squall caused a drop from 56° to 50° . The barometer during the earlier storm showed only a moderate thunderstorm effect, and afterward rose slightly during the remainder of the night. The wind blew uniformly from the south and southwest during the day with an hourly movement of from 13 to 24 miles.

Warm, humid conditions similar to those at Erie obtained during the day in the region traversed by the tornado. The winds were moderate south to southwest and the sky was generally cloudy. After 5 p. m. the clouds became heavier, and appeared very threatening because of their broken structure, having heavy masses moving in various directions. About four miles southwest of Cambridge Springs, at 5:30 p. m., a distinct funnel cloud developed, and seemed suspended from the cloud strata far above the earth. As it moved eastward it increased in size and its point gradually approached the surface, which it apparently first touched within a mile of Cambridge Springs, as was indicated afterward by broken trees and scattered corn shocks. From this point its path of destruction, 200 feet wide, swerving to right and left of a straight line as its vortex swayed from side to side, led east-northeastward across the north side of the borough of Cambridge Springs to Millers station, and thence to Shreve Ridge, about 5 miles southwest of Union City. After passing this point it disappeared, apparently much as it had formed, the total time from formation to disappearance being about an hour. Its track was about 20 miles long, and although it had an average width of 200 feet, the greatest damage was done over a path of approximately 125 feet wide.

The damage was most severe on the southern side of the course, and most of the débris was scattered to the left. At Cambridge Springs, twenty minutes before the appearance of the tornado, a thickly insulated electric light cord was found so heavily charged with static electricity as to be hot to the touch, as were also the switch buttons connected thereto. There was no rain during the day until ten minutes before the tornado struck, when there was a light shower followed by hailstones of moderate size. No precipitation attended the tornado itself, although moderately heavy rain followed ten minutes thereafter, accompanied by thunder, which continued for almost an hour, when the sky cleared. It soon clouded again, however, and remained cloudy during the night.

As is usual with these storms, curious and interesting incidents abounded all along its course, some of which are given below from descriptions in the Cambridge Springs Enterprise:

"Something of its tremendous force can be judged from the fact that it ripped some of the heavy steel framework from the north end of the Grand street bridge, and carried one of the steel beams, weighing hundreds of pounds, fully 125 feet away."

"At the home of Mr. F. W. Hyatt, the force of the wind blew a curtain between the glass and sash of the window, and it can not be moved either way."

"Window frames have been found a mile away with not a pane of glass broken."

"One remarkable feature of the storm was that while it completely demolished the Hanson residence, it took only a few panes of glass out of the laundry building standing within 20 feet of it."

"The funnel had the appearance of an inverted cone, swaying in the top. The end toward the earth was small, ranging from a foot to 3 or 4 feet in diameter. Practically all who saw the storm agreed that it carried boards, planks, and other missiles from 400 to 500 feet high."

TABLE 1.—Climatological data for October, 1909. District No. 4, Lake Region.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Minnesota.																					
Duluth.	St. Louis.	1,133	38	42.4	-2.8	71	8	18	28	23	-0.59	1.56	2.0	9	7	9	15	ne.	U. S. Weather Bureau.		
Floodwood.	do.	1,257	5	44.4	-	82	7	8	28	44	1.27	-	1.07	2.0	2	8	7	16	nw.	M. H. Schusler.	
Mount Iron.	do.	1,610	15	42.0	-0.1	80	7	10	28	38	2.35	-	0.59	1.20	13.3	8	0	23	8	nw.	Oliver Iron Mining Co.
Stephens Mine.	do.	2	40.8	-	80	8	5	28	44	2.33	-	1.08	7.0	8	8	10	13	w.	Do.		
Two Harbors.	Lake.	692	15	44.1	-1.0	73	6	11	28	33	3.33	+0.10	1.75	T.	3	10	13	8	ne.	Geo. W. Watts.	
Wisconsin.																					
Appleton.	Outagamie.	795	10	46.2	-2.9	80	8	22	28	40	0.84	-	1.06	0.35	2.8	4	13	0	18	s.	J. L. Mead.
Ashland.	Ashland.	647	15	45.7	-1.8	85	7	21	28	38	1.83	-	1.39	0.65	3.0	7	9	8	14	s.	Sam Wheeler.
Cecil.	Shawano.	804	2	44.2	-3.6	78	7	10	21	43	0.32	-	0.18	1.0	3	9	20	2	sw.	L. W. Schmidt.	
Chilton.	Calumet.	860	15	45.7	-3.6	81	8	24	19†	42	0.90	-	1.51	0.44	1.0	4	17	11	3	nw.	D. V. Jones.
Crandon.	Forest.	1,080	12	44.2	-1.1	73	7	20	19	36	0.76	-	1.89	0.20	3.0	6	18	6	7	s.	A. L. Emde.
Florence.	Florence.	1,293	17	42.1	-1.2	74	6†	20	27†	38	0.95	-	1.91	0.50	T.	3	12	1	18	nw.	F. S. Evans.
Fond du Lac.	Fond du Lac.	800	23	45.7	-2.8	83	8	16	28	44	0.76	-	1.40	0.28	1.0	6	13	0	9	sw.	Geo. W. Marshall.
Grand River Locks.	Marquette.	616	1	44.9	-	80	8	11	19	40	0.99	-	2.31	0.50	1.5	4	19	2	10	se.	Jerry Parkinson.
Green Bay.	Brown.	617	1	45.8	-1.3	80	8	26	28	31	0.95	-	1.42	0.38	2.3	6	6	7	16	w.	U. S. Weather Bureau.
Herbster.	Bayfield.	700	1	39.6	-	80	8	11	27	41	3.95	-	1.40	0.20	T.	3	12	11	1	s.	Wm. Angell.
Iron River.	Bayfield.	1,086	—	44.6	-	85	7	18	28	37	4.18	-	1.45	22.0	5	7	0	24	s.	Harry C. Hale.	
Keweenaw.	Keweenaw.	590	—	45.6	-	68	6†	27	12	27	0.99	-	0.40	2.4	3	8	12	1	sw.	Eugene V. Kimball.	
Manitowoc.	Manitowoc.	616	59	45.5	-2.3	71	30	26	28	30	1.07	-	1.53	0.50	2.5	5	9	13	9	sw.	Johanna Lups.
Menasha.	Winnebago.	764	12	-	-	74	8†	23	28	33	0.86	-	1.73	0.96	1.0	3	18	6	7	sw.	George T. Alanson.
Menomonee Falls.	Waukesha.	842	—	45.8	-	74	8†	23	28	33	0.86	-	0.34	0.2	5	16	9	6	s.	S. H. Christman.	
Milwaukee.	Milwaukee.	681	39	47.6	-2.6	73	7	28	28	36	0.61	-	1.78	0.25	0.2	7	15	9	7	w.	U. S. Weather Bureau.
New London.	Outagamie.	762	13	45.9	-2.9	81	8	21	28	35	0.60	-	2.02	0.20	2.0	3	11	8	12	nw.	W. K. Smith.
Oconto.	Oconto.	590	18	45.4	-3.1	81	8	23	19	42	1.10	-	1.29	0.37	2.5	6	10	15	6	sw.	Evan Vincent.
Oshkosh.	Winnebago.	744	20	45.0	-4.2	78	8	20	19	34	0.58	-	1.53	0.38	T.	3	16	12	2	sw.	G. H. Carpenter.
Pine River.	Waushara.	900	14	45.0	-3.9	80	8	18	28	37	0.69	-	1.85	0.29	0.5	4 ^b	6 ^c	13 ^c	9	nw.	John P. Whelan.
Plum Island.	Door.	588	1	45.9	-	65	8†	30	29	18	1.43	-	0.45	3.9	7	5	12	14	nw.	R. C. Kann.	
Port Washington.	Ozaukee.	713	16	48.6	-0.8	76	31	27	14†	29	0.93	-	1.15	0.51	T.	2	10	6	15	se.	Daniel Davis.
Racine.	Racine.	633	12	47.7	-5.4	74	31	22	28	30	0.67	-	1.03	0.40	T.	5	18	1	12	nw.	Louis C. Meyer.
Sheboygan.	Sheboygan.	831	9	47.2	-	71	30	27	28	25	1.13	-	0.66	0.5	5	6	14	11	nw.	Adam N. Dier.	
Sturgeon Bay.	Door.	600	11	44.6	-2.9	70	8†	24	19†	34	1.11	-	0.43	4.0	5	14	10	7	w.	E. B. Banks.	
Superior.	Douglas.	671	—	43.0	-	71	8	17	28	32	2.28	-	1.88	0.0	6	8	9	14	nw.	J. H. Flagg.	
Waupaca.	Waupaca.	857	13	44.4	-4.3	80	8	18	19	43	0.79	-	1.71	0.40	1.0	4	7	12	w.	U. S. Weather Bureau.	
Illinois.																					
Chicago.	Cook.	824	39	50.6	-2.6	76	9	20	13	24	1.20	-	1.35	0.52	T.	5	9	12	10	w.	Mrs. Josie Kuhlman.
Indiana.																					
Auburn.	Dekab.	874	6	45.0	-	80	9	20	20	47	2.40	-	0.72	T.	6	15	1	15	sw.	Mrs. Josie Kuhlman.	
Elkhart.	Elkhart.	801	—	-	-	82	9	22	29	43	2.67	-	1.12	T.	6	15	8	8	sw.	Miles Medical Co.	
Fort Wayne.	Allen.	775	5	48.0	-	83	8	22	14	45	3.50	+1.71	1.28	T.	6	13	8	10	sw.	O. E. Mohler.	
Hammond.	Lake.	598	12	49.0	-5.6	83	9	25	28	44	2.28	-	1.18	0.0	4	17	5	9	w.	C. W. Whitney.	
Lima.	Lagrange.	886	—	45.6	-	80	9	25	14†	38	2.12	-	0.32	0.74	1.0	10	14	7	10	sw.	Jas. E. Zook.
South Bend.	St. Joseph.	736	10	47.8	-6.4	80	8	25	14†	38	2.12	-	0.32	0.74	T.	3	14	3	10	sw.	H. H. Swain.
Michigan.																					
Adrian.	Lenawee.	707	31	57.8	-5.3	83	9	20	29	42	1.47	-	1.40	0.43	0.0	5	8	6	16	s.	B. F. Gibbs.
Agricultural College.	Ingham.	820	45	48.2	-2.5	80	9	21	29	38	0.71	-	1.73	0.18	0.5	11	16	11	4	w.	Prof. A. J. Fatten.
Allegan.	Allegan.	693	18	48.4	-2.6	86	8	25	20	39	1.62	-	1.14	0.51	3.0	5	10	7	14	w.	P. M. Smith.
Alma.	Gratiot.	750	22	44.6	-3.9	79	9	20	24	39	0.82	-	1.82	0.35	1.0	5	8	13	10	sw.	U. S. Weather Bureau.
Alpena.	Alpena.	609	36	43.6	-1.3	73	6	25	29	35	0.78	-	2.64	0.33	T.	10	10	7	14	nw.	University of Michigan.
Ann Arbor.	Washtenaw.	930	29	46.5	-3.4	80	9	22	29	34	1.27	-	1.39	0.52	T.	8	15	6	10	w.	Wm. Atkin.
Arbela.	Tuscola.	723	13	46.4	-3.6	81	8	18	29	35	1.32	-	1.46	0.68	1.5	6	3	13	15	ne.	F. N. Hilton.
Ball Mountain.	Oakland.	983	19	-	-	84	7	26	28	38	0.86	-	0.66	0.68	0.68	8	15	5	10	sw.	Agent, D. S. S. & A. Ry.
Baraga.	Baraga.	623	7	46.7	-	79	8	22	29	38	1.03	-	1.26	0.41	T.	6	14	0	16	n.	Elmer E. Sager.
Battle Creek.	Calhoun.	822	25	46.0	-5.8	79	8	24	29	33	1.60	-	1.44	0.50	T.	6	7	14	10	sw.	Agent, P. M. R. R.
Bay City.	Bay.	593	13	46.3	-3.8	76	8	24	29	35	0.80	-	0.42	1.35	1.5	5	10	12	9	sw.	P. M. Smith.
Bensonia.	Benzle.	832	13	46.0	-1.4	79	9	25	29	35	0.80	-	1.03	0.82	0.5	7	8	12	11	sw.	M. S. Joiner.
Berlin.	St. Clair.	20	44.8	-4.1	79	9	20	29	43	1.80	-	1.03	0.82	0.86	0	8	11	10	sw.	R. O. Gould.	
Big Rapids.	Mecosta.	906	13	43.8	-4.3	80	8†	19	29	46	1.96	-	0.94	0.80	0	7	16	3	12	nw.	Charles Gay.
Blaney.	Schoolcraft.	2	40.4	-	80	8	23	26	36	0.83	-	0.86	0.0	0.86	0	8	11	10	sw.	Dr. S. S. Hackwell.	
Bloomingdale.	Van Buren.	5	48.2	-	78	8†	28	121	33	1.42	-	0.50	2.5	4	15	3	13	3	se.	John M. Haven.	
Cadillac.	Wexford.	1,378	—	44.4	-	80	8	21	9	35	2.19	-	0.66	6.0	8	15	5	10	sw.	A. J. Teed.	
Calumet.	Houghton.	1,246	21	43.2	-0.7	77	8	24	27	35	3.02	-	0.18	1.00	10.0	9	9	4	18	nw.	E. S. Griserson.
Cassopolis.	Cass.	903	8	47.1	-	78	9	26	131	33	1.55	-	0.90	0.90	T.	5	21	0	10	sw.	Agent, M. C. R. R.
Charlevoix.	Charlevoix.	610	5	45.6	-	79	9	20	29	40	0.93	-	0.38	0.4	6	13	3	15	sw.	City of Charlevoix.	
Charlotte.	Eaton.	5	45.6	-	76	8	20	29	38	1.94	-	0.38	0.80	0.80	4	8	10	14	nw.	U. P. Express Station.	
Chatham.	Alger.	875	8	42.4	-	76	7	18	29	36	2.10	-	0.38	0.80	T.	6	13	12	6	sw.	E. A. Bouchard.
Cheboygan.	Leelanau.	611	19	44.4	-3.4	76	8	2													

TABLE 1.—*Climatological data for October, 1909. District No. 4—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days, 0.1 inch or more.	Number of partly cloudy days.	Number of clear days.			
<i>Michigan—Cont'd.</i>																				
Holland.	Ottawa.	610	3	47.0	.....	79	8t	24	19	37	1.41	.....	0.74	1.0	7	10	12	9	se.
Houghton.	Houghton.	668	8	45.2	.....	85	7	27	28	35	2.83	.....	1.02	4.7	10	6	8	17	nw.
Howell.	Livingston.	924	17	44.8 ^a	- 4.7	77 ^b	8	20 ^c	29	38 ^a	1.50	- 0.72	0.65	0.0	6	13	8	10	nw.	
Humboldt.	Marquette.	1,536	12	40.8	- 1.1	78	9	18	29	46	1.20	- 1.46	0.45	0.4	5	10	3	17	w.	
Iron Mountain ^c .	Dickinson.	1,111	8	44.9	.....	80	8	25	18 ^c	36	1.00	.....	1.07	T.	3	8	7	13	se.
Iron River.	Iron.	1,504	12	39.7	- 3.8	79	7	22	15 ^c	43	2.65	- 1.08	0.75	T.	6	14	10	7	nw.	
Ironwood.	Gogebic.	1,520	6	43.3	.....	81	7	18	28	30	4.60	.....	1.80	15.0	6	13	3	15	s.
Ishpeming.	Marquette.	1,536	6	42.8 ^c	.....	77 ^c	7t	24 ^c	23	32	1.25	.....	0.40	4.0	13	6	10	15	n.
Ile Royale.	Keweenaw.	610	2	44.0	.....	66	8	28	27	31	0.62	.....	0.62	T.	5	5	2	24	nw.
Ivan.	Kalkaska.	20	43.2	- 3.2	78	8	24	20 ^t	41	1.52	- 1.21	0.35	3.5	11	4	17	10	sw.		
Jackson.	Jackson.	927	12	48.2	- 3.3	70	7t	24	29	34	1.54	- 1.00	0.48	T.	8	14	5	12	sw.	
Jeddo.	St. Clair.	667	20	48.2	- 3.3	70	7t	24	29	34	1.54	- 1.00	0.48	T.	8	14	5	12	sw.	
Kalamazoo.	Kalamazoo.	955	33	47.8	- 3.1	78	9	22	19	32	0.63	- 0.63	0.60	7	18	2	11	sw.		
Lansing.	Ingham.	881	22	46.2	- 3.3	79	8t	22	29	36	1.00	- 1.37	0.32	1.0	10	12	4	15	sw.	
Lapeer.	Lapeer.	827	10	46.4	- 4.6	78	8t	21	29	40	0.91	- 1.09	0.45	T.	4	14	3	9	sw.	
Mason.	Mackinac Island.	586	11	48.2	.....	78	9	.....	.....	0.97	.....	- 1.27	0.70	1.0	3	8	11	7	nw.
Mackinaw.	Mackinac.	331	9	44.2	.....	74	8	22	29	29	.....	.....	.....	1.8	5	8	8	sw.	
Macomb.	Cheboygan.	502	13	45.0	- 2.8	72	7	20	29	32	1.83	- 1.62	0.55	T.	7	10	13	8	nw.	
Manistee.	Antrim.	1,121	13	42.0	- 5.2	78	8	17	29	35	2.35	- 0.75	0.75	T.	9	15	4	12	sw.	
Maple Ridge.	Delta.	600	12	46.2	- 2.4	80	9	24	29	36	0.92	.....	0.26	0.0	6	11	8	12	n.
Marquette.	Marquette.	734	35	45.2	- 0.5	81	8	28	27	28	1.76	- 1.43	0.36	4.0	15	5	8	18	w.	
Menominee.	Menominee.	581	10	44.3 ^a	- 5.2	74 ^b	7	26 ^c	28	31 ^c	0.66	- 1.74	0.38	T.	3	16	6	9	nw.	
Midland.	Montague.	604	10	48.1	- 2.0	78	8t	20	30	47	.....	.....	.....	T.	10	13	8	13	se.
Muskegon.	Muskegon.	660	6	46.3	.....	77	9	24	29	32	1.44	.....	0.76	0.0	3	9	11	11	sw.
Morencie.	Lenawee.	811	2	47.2	.....	82	9	19	29	41	1.75	.....	0.80	0.0	5	16	7	8	sw.
Mount Clemens.	Macomb.	615	9	46.2	.....	76	9t	21	29	37	1.19	.....	0.55	T.	7	10	3	18	sw.
Mount Pleasant.	Isabella.	826	10	47.4	- 1.3	79	11	20	28	41	0.53	- 1.69	0.17	4	19	3	9	sw.		
Muskegon.	Muskegon.	557	13	45.4	- 5.7	76	9	29	13	34	0.65	- 2.04	0.40	T.	2	10	4	17	w.	
Newberry.	Luce.	773	8	47.2	- 2.5	82	8	28	29	31	1.73	- 1.22	0.48	0.0	11	6	11	14	nw.	
Old Mission ^a .	Grand Traverse.	849	15	47.2	- 4.6	82	8	28	29	31	1.73	- 1.22	0.48	0.0	11	6	11	14	nw.	
Olivet.	Eaton.	934	18	44.3	- 4.6	75	9	22	29	33	1.58	- 1.06	0.37	2.0	10	16	2	13	nw.	
Omer.	Arenac.	616	10	47.0	- 1.6	74	8t	19	20 ^t	41	.....	.....	.....	.....	8	3	20	sw.	
Onaway.	Presque Isle.	826	6	47.0	.....	76	8	25	15 ^t	36	1.34	.....	0.50	0.0	6	8	13	10	nw.
Ovid.	Clinton.	780	19	46.6	- 5.2	79	9	20	29	36	0.83	- 1.08	0.57	T.	4	8	13	8	sw.	
Owosso ^b .	Shiawassee.	731	12	46.6	.....	80	7	20	19	40	3.01	+ 0.21	0.75	T.	5	11	9	13	nw.
Petoskey.	Emmet.	660	19	48.5	- 0.8	80	7	20	29	35	2.07	- 0.63	0.60	T.	4	8	3	15	sw.	
Plymouth ^b .	Wayne.	725	12	44.6	- 7.1	86	9	15	5	51	2.00	- 0.94	1.00	T.	4	8	3	15	sw.	
Pontiac.	Oakland.	935	9	46.8	.....	78	9	24	29	30	1.46	.....	0.60	T.	7	13	8	10	w.
Port Austin ^a .	Huron.	618	13	45.2	- 5.5	79	8	24	20	40	.....	.....	.....	T.	5	18	7	11	nw.
Port Huron.	St. Clair.	639	34	45.9	- 3.6	78	9	25	29	32	1.87	- 0.86	0.56	T.	10	11	6	14	sw.	
Powers.	Menominee.	868	8	44.0	- 1.6	79	8	18	19	44	1.40	- 2.13	0.50	1.0	4	8	15	5	n.	
Reed City.	Oceola.	1,033	13	43.1	- 5.0	83	9	21	21	49	0.37	- 2.77	0.16	1.6	4	17	9	5	w.	
Rose command ^a .	Roscommon.	1,141	5	43.0	.....	75	8	14	29	54	1.53	.....	0.45	4.0	9	8	8	11	sw.
Saginaw.	Saginaw.	601	7	47.2	.....	89	8	24	29	33	1.01	.....	0.40	0.5	6	15	9	11	sw.
Saginaw, W. S.	do.	601	14	46.0	- 4.1	81	8	20	29	44	0.80	- 2.05	0.38	0.8	8	7	16	8	sw.	
St. Ignace.	Mackinac.	593	19	46.0	.....	81	8	20 ^t	11 ^t	44	1.15	.....	0.80	0.0	5	10	0	21	w.
St. James.	Charlevoix.	681	3	44.2	.....	76	8	25	15 ^t	36	1.34	.....	0.50	0.0	6	8	13	10	nw.
St. Johns.	Clinton.	779	17	49.4	- 3.0	81	8	30	28	31	1.42	- 1.40	0.60	0.0	4	12	3	16	sw.	
St. Joseph.	Berrien.	593	23	49.4	- 3.0	81	8	30	28	31	1.42	- 1.40	0.60	0.0	4	12	3	16	sw.	
Sandusky ^b .	Sanilac.	790	44.4	.....	78	9	20	29	32	1.54	.....	0.78	0.0	4	17	9	18	sw.	
Saranac.	Ionia.	639	14	45.4	- 3.6	81	9	20	29	43	1.32	- 1.76	0.42	4.0	7	12	1	18	sw.	
Sault Ste. Marie.	Chippewa.	614	21	43.2	- 0.2	74	8	22	29	31	2.07	- 1.19	0.72	1.0	13	3	7	21	se.	
South Haven.	Van Buren.	585	13	46.6	- 4.7	80	8	22	17	40	1.90	- 0.39	0.50	T.	5	16	5	10	n.	
Stanton.	Montcalm.	880	17	41.2	- 3.3	82	7	15	28	42	2.28	+ 0.19	1.50	20.0	3	4	10	17	n.	
Thomaston.	Gogebic.	1,347	12	45.5	- 5.2	72	8t	20	29	35	2.48	- 0.56	0.80	0.0	1	6	13	3	nw.	
Thornville.	Lapeer.	975	32	45.5	.....	72	8t	20	29	35	0.99	- 0.93	0.99	9.0	2	6	12	13	n.
Traverse City.	Grand Traverse.	588	12	43.0	.....	85	8	15	28	56	3.52	.....	1.21	20.6	11	10	7	14	w.
Vassar.	Ontonagon.	641	9	43.3	.....	83	17	18	28	32	3.52	.....	1.21	20.6	11	10	7	14	w.
Victoria.	Onondaga.	1,603	11	41.6	.....	79	7t	17	28	43	1.37	.....	0.36	5.4	10	12	2	17	nw.
Waukegan.	Chippewa.	842	12	45.6	- 5.4	78	9	22	29	37	1.87	- 1.08	1.00	0.0	6	17	7	15	sw.	
Webbersville.	Ingham.	884	7	45.6	.....	79	8t	18	29	44	1.26	.....	0.47	T.	8	9	7	15	sw.
West Branch.	Ogemaw.	973	7	41.6	.....	74	7t	14	29	46	1.94	- 0.54	0.60	4.4	7	13	0	18	n.
Wetmore.	Alger.	878	12	44.4	- 1.9	68	7	24	29	42	2.08	- 1.34	0.50	3.0	12	5	2	24	se.	
Whitefish.	Chippewa.	610	19	44.4	- 4.6	78	9	15	29	42	1.59	.....	0.80	T.	9	8	9	14	sw.
Woodlawn.	Montgomery.	7	42.0	.....	79	8	25	29	32	1.09	- 0.34	0.50	T.	6	15	0	11	nw.	
Ypsilanti.	Washtenaw.	736	24	46.8	- 2.8	79	9	23	29	36	1.90	- 0.57	0.65	0.0	11	6	21	4	14	nw.
Ohio.	Summit.	1,081	23	47.0 ^d	- 4.5	79 ^d	9	29 ^t	28 ^t	35 ^d	1.23	- 0.98	0.60	T.	8	12	6	13	sw.	
Benton Ridge.	Hancock.	800	17	48.0	- 5.1	79	9	26	19	35	2.46	+ 0.38	1.00	T.	7	16				

TABLE 1.—*Climatological data for October, 1909. District No. 4—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.				
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, 0.1 inch or more.					
<i>Ohio—Cont'd.</i>																				
Upper Sandusky.	Wyandot.	854	27	49.2	— 3.9	81	9	23	29	37	2.23	— 0.05	1.19	T.	6	18	w.			
Vickery.	Sandusky.	589	17	47.6	— 5.2	83	9	21	29	44	1.57	— 0.39	0.85	T.	7	12	sw.			
Wauseon.	Fulton.	780	40	46.8	— 4.2	82	9	20	29	42	1.93	— 0.70	0.78	T.	9	14	sw.			
Wellington*.	Lorain.	856	17	43.0	— 5.3	80	9	24	29	38	1.71	— 0.48	0.74	T.	6	20	sw.			
Willoughby.	Lake.										1.07	— 0.37	0.44	T.	5	7	w.			
<i>Pennsylvania.</i>																				
Erie.	Erie.	713	36	48.7	— 4.4	79	9	32	24	26	1.59	— 2.21	0.44	T.	13	6	7	sw.		
New York.																	U. S. Weather Bureau.			
Adams Center.	Jefferson.	540	18	47.5	— 4.7	81	10	20	30	32	5.87	+ 1.44	1.15	3.0	20	6	11	nw.		
Angelica.	Allegany.	1,349	26	42.2	— 4.7	77	9	12	30	42	3.52	+ 0.49	0.77	1.0	15	3	7	w.		
Appleton.	Niagara.	270	18	46.6	— 3.4	81	10	24	30	31	2.81	+ 0.13	1.00	0.3	12	11	4	sw.		
Auburn.	Cayuga.	715	40	47.4	— 2.3	82	9	22	30	33	1.88	+ 1.57	0.75	T.	9	10	13	nw.		
Avon.	Livingston.	585	14	46.0	— 4.3	79	10	20	30	36	1.91	+ 0.64	0.75	T.	7	7	9	15		
Benson Mines.	St. Lawrence.	1	1																	
Blue Mountain Lake.	Hamilton.	1,750	9																	
Brockport.	Mooroe.	537	13	47.1	— 4.3	78	9†	23	30	29	2.59	— 0.43	0.82	T.	10	7	10	w.		
Buffalo.	Erie.	767	58	47.9	— 3.6	81	9	29	30	35	2.54	+ 0.99	1.12	6.0	12	7	5	sw.		
Canton.	St. Lawrence.	448	15	45.4	— 1.8	81	10	21	30	33	1.33	+ 2.01	0.39	T.	13	9	3	w.		
Cape Vincent.	Jefferson.	246	4	46.5		80	10	25	24	28	1.75	+ 0.64	0.0	11	10	10	11	sw.		
Carvers Falls.	Washington.	243	11	46.5	— 2.3	83	10	16	30	41	1.27	+ 1.71	0.34	0.0	7	16	5	s.		
Chazy.	Clinton.	151	15	48.4	— 5.6	80	10	23	21	38	0.50	+ 0.35	0.0	5	14	3	14	n.		
Dannemora.	do.	1,490	4	44.6		78	9	19	30	32	0.72	+ 0.24	T.	4	9	2	20	w.		
Elba.	Genesee.	500	10	43.4	— 6.4	78	9	19	30	34	2.05	+ 0.72	1.00	T.	3	18	2	11	sw.	
Faust.	Franklin.	1,552	9														Aaron W. Maddox.			
Fayetteville.	Oondaga.	530	8	48.6		84	10	20	30	35	1.82	+ 1.68	0.58	T.	11	10	3	18	nw.	
Gabrels.	Franklin.	1,729	7	42.0		84	9	12	30	50	1.86	+ 0.61	0.61	3.2	9	11	6	14	w.	
Harkness.	Clinton.	622	6	46.8		81	10	23	21	30	0.42	+ 0.12	0.5	9	21	10	0	n.		
Hemlock Lake.	Livingston.	900	11	40.2	— 5.0	77	9	24	30	30	2.01	+ 0.55	0.77	0.0	5	11	5	15	nw.	
Hunt.	Ithaca.	1,321	10	46.4	— 4.4	84	9	18	30	38	2.26	+ 0.67	0.85	0.0	6	10	6	15	nw.	
Kenea Valley.	Tompkins.	923	31	46.7	— 2.8	82	9	28	29	34	2.34	+ 0.93	1.18	T.	11	7	6	18	nw.	
Keuka Park.	Essex.	1,000	11	45.0	— 2.6	85	10	18	21	42	0.88	+ 2.59	0.15	T.	12	16	5	16	sw.	
King Ferry.	Yates.	750	63	47.4	— 3.5	82	9	26	20	40	1.61	+ 0.99	0.47	T.	19	11	4	16	nw.	
Lake George.	Cayuga.	9	4	48.2		81	10	25	30	36	0.91	+ 1.76	1.72	0.80	T.	8	11	6	14	n.
Lake Placid Club.	Warren.	350	4			81	10	25	30	36	0.91	+ 0.21	0.0	7	13	3	10	n.		
Le Roy.	Essex.	1,864	1	38.3		76	9	15	31	34	2.53	+ 1.10	5.1	15	9	9	9	13	w.	
Lockport.	Genesee.	920	19	46.2	— 1.6	82	9	24	30	34	2.37	+ 0.33	1.00	1.0	10	9	5	17	w.	
Lowville.	Niagara.	650	22	45.8	— 5.6	77	8	24	30	30	2.95	+ 0.31	0.92	1.5	12	8	0	23	sw.	
Lyndonville.	Lewis.	900	42	43.6	— 2.6	82	10	22	30	30	2.72	+ 0.67	0.85	0.0	9	10	6	15	w.	
Moirs.	Orleans.	9	9	46.6	— 1.5	83	10	22	30	35	1.15	+ 2.51	1.74	0.0	7	14	3	14	sw.	
Nehasane.	Franklin.	200	9			83	10	22	30	35	0.91	+ 0.39	T.	9	6	16	1	17	w.	
North Hammond.	Hamilton.	1,750	1	41.0		80	9	10	30	43	2.39	+ 0.56	T.	16	13	1	17	s.		
North Lake.	St. Lawrence.	300	20	47.2	— 1.3	81	10	24	30	32								H. A. Pauls.		
Ogdensburg.	Herkimer.	1,822	8															State Hospital.		
Old Forge.	St. Lawrence.	175	17	47.7	— 2.5	80	10	26	20	32	1.06	+ 1.28	0.41	T.	7	10	16	5	w.	
Oswego.	Herkimer.	1,733	1	42.4		84	9	10	30	43	2.33	+ 0.55	T.	13	9	3	19	nw.		
Otto.	Oswego.	335	39	47.4	— 3.8	79	10	30	29	24	2.23	+ 1.11	0.48	T.	13	6	7	18	nw.	
Palermo.	Cattaraugus.	1,410	5	46.2		82	9	21	31	30	2.92	+ 0.78	0.5	13	12	7	12	nw.		
Perry City.	Oswego.	460	50								1.81	+ 1.74	0.68	T.	11	12	4	15	sw.	
Philadelphia.	Schuyler.	1,038	19	45.5	— 2.3	77	9	23	30	38	2.45	+ 1.44	0.78	T.	10	8	6	17	nw.	
Plattsburg.	Jefferson.	485	3	46.8		82	10	20	30	33	2.20	+ 0.42	T.	15	9	13	9	w.		
Potsdam.	Clinton.	170	50	46.4	— 1.5	76	11	24	21	30	0.62	+ 2.23	0.25	T.	8	13	8	10	s.	
Raquette Lake.	St. Lawrence.	300	33	46.4	+ 1.3	80	10	19	30	32	3.46	+ 1.06	0.88	T.	12	8	4	19	sw.	
Rochester.	Hamilton.	1	43.0			74	9	19	30	29	1.51	+ 0.26	0.26	T.	9	10	1	20	w.	
Romulus.	Moorne.	523	80	47.3	— 3.5	81	9	26	30	30	2.79	+ 0.07	1.42	T.	9	8	8	15	w.	
Seneca.	Seneca.	719	17	48.2	— 3.0	80	10	28	30	38	1.43	+ 1.79	0.64	T.	6	6			n.	
Scottsville.	Monroe.										1.27	+ 0.65	0.0	4				F. Budlong.		
Shortsville.	Ontario.	740	10	47.1	— 4.4	79	9	26	29	34	1.58	+ 1.16	0.42	0.0	7	12	7	12	sw.	
Skenateeles.	Onondaga.	9	do.								2.40	+ 0.50	0.0	15				C. H. Letting.		
Syracuse.	Tiendonoga.	597	7	47.2	— 3.8	70	10	28	30	29	1.31	+ 1.90	0.50	0.3	13	6	8	17	w.	
Tiendonoga.	Essex.	344	11	49.4	— 0.8	79	10	29	26	33	0.93	+ 1.81	0.70	0.0	3	18	7	6	s.	
Trudeau.	do.	1,620	16														Eva M. De Lano.			
Volusa.	Chautauqua.	1,167	10	46.5	— 4.4	78	9	23	25	31	2.89	+ 0.95	1.30	4.0	6	7	11	13	s.	
Watertown.	Jefferson.	737	16	46.6	— 3.2	78	10	21	30	27	2.90	+ 0.85	0.62	T.	16	11	5	15	sw.	
Wedgewood.	Schuyler.	1,430	20	45.8	— 3.6	80	9	23	29	37	2.44	+ 0.96	0.51	T.	15	13	7	11	nw.	
Weftield.	Chautauqua.	837	13	46.0 ^a	— 0.6	77 ^a	10	27 ^a	30	25 ^a	2.86	+ 0.94	0.83	0.0	9					
Youngstown.	Nisagara.	7									2.81		0.66	2.0	9					
<i>Vermont.</i>																				
Burlington.	Chittenden.	404	3	46.2	— 0.7	81	10	24	30	35	1.13	+ 2.03	0.64	T.	8	9	16	6	s.	
Cornwall.	Addison.	507	17	47.8	— 1.9	84	10	23	30	34	0.94	+ 1.46	0.30	T.	9	12	4	15	s.	
Enosburg Falls.	Franklin.	601	19	45.2	— 2.1	86	10	21	21	48	1.49	+ 1.67	0.49	0.5	12	7	3	21	nw.	
Northfield.	Washington.	876	24	43.1	— 0.5	80	10	20	30	33	1.11	+ 1.37	0.49	1.3	15	7	7	17	nw.	
Wells.	Rutland.	750	18	44.8	— 3.2	74	9†	19	30	26	1.19	+ 1.78	0.35	0.5	9	8	13	10	s.	

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Data are from standard instruments not supplied by the U. S. Weather Bureau.

§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

|| Estimated by observer.

¶ Precipitation for the 24 hours ending on the morning when it is measured.

TABLE 2.—*Daily precipitation for October, 1909. District No. 4, Lake Region.*

TABLE 2.—*Daily precipitation for October, 1909. District No. 4—Continued.*

Stations.	River basins.	Day of month.																																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.				
<i>Michigan—Cont'd.</i>																																					
Ironwood.	Lake.														.43	1.00	1.30	.05	T.															T.	4.66		
Ishpeming.	Escanaba.														.05	.10	.05	.05	.04	.05	.05	.03	.04											1.25			
Ish Royale.	Lake.														.27	.35	.28	.31	T.	T.	T.	T.												1.83			
Ivan.	Manistee.														.18	.35	.10	.10	T.	T.	.08	.04	.05											1.52			
Jackson.	Grand.														.48	.15	.15		T.																T.	1.54	
Jeddo.	St. Clair.														.55	.15	.80																		2.07		
Kalamazoo.	Kalamazoo.														.16	.11	.14	.02																	1.00		
Lansing.	Grand.																																			0.91	
Leper.	Saginaw.																																			0.97	
Ludington.	Pere Marquette.																																				
Mackinac Island.	Lake.																																				
Mackinaw.	do.																																				1.83
Mancelona.	do.																																				2.35
Manistee.	Manistee.																																				
Maple Ridge.	Lake.																																				0.92
Marquette.	do.																																				
Menominee.	Menominee.																																				0.68
Midland.	Saginaw.																																				
Montague.	White.																																				1.44
Morenci.	Maumee.																																				1.75
Mt. Clemens.	Clinton.																																				1.19
Mt. Pleasant.	Saginaw.																																				0.53
Muskegon.	Muskegon.																																				0.65
Newberry.	Taquemenon.																																				
Old Mission.	Lake.																																				1.73
Olivet.	Kalamazoo.																																				1.58
Omer.	Lake.																																				
Osway.	Cheboygan.																																				
Ovid.	Grand.																																				
Owosso.	Saginaw.																																				0.88
Petoskey.	Lake.																																				3.01
Plymouth.	Rouge.																																				2.00
Pontiac.	Clinton.																																				1.48
Port Austin.	Lake.																																				
Port Huron.	St. Clair.																																				1.87
Powers.	Lake.																																				1.40
Reed City.	Muskegon.																																				0.37
Roscommon.	Au Sable.																																				1.53
Saginaw.	Saginaw.																																				1.01
Saginaw W. S.	do.																																				0.80
St. Ignace.	Lake.																																				1.15
St. James.	do.																																				1.34
St. Johns.	Grand.																																				
St. Joseph.	St. Joseph.																																				1.42
Sandusky.	Lake.																																				1.54
Saranac.	Grand.																																				1.32
Sault Ste. Marie.	St. Mary's.																																				2.07
South Haven.	Lake.																																				1.90
Stanton.	Grand.																																				
Thomaston.	Lake.																																				2.28
Thornville.	Saginaw.																																				2.48
Traverse City.	Lake.																																				0.99
Vassar.	Saginaw.																																				3.52
Victoria.	Ontonagon.																																				
Wasepl.	St. Joseph.																																				1.87
Watersmeet.	Ontonagon.																																				0.37
Weberville.	Grand.																																				1.37
West Branch.	Lake.																																				1.26
Wetmore.	do.																																				1.04
Whitewater Point.	T.																																				2.08
Woodlawn.	Au Sable.																																				1.59
Ypsilanti.	Huron.																																				1.99
<i>Ohio.</i>																																					
Akron||.	Lake.																																				1.23
Benton Ridge.	Maumee.																																				2.46
Bowling Green.	Lake.																																				
Buoyrus||.	Sandusky.																																				2.46
Cleveland (1).	Lake.																																				

TABLE 2.—*Daily precipitation for October, 1909. District No. 4—Continued.*

TABLE 3.—Maximum and minimum temperatures at selected stations, October, 1909. District No. 4, Lake Region.

Date.	Michigan.						Ohio.						New York.						Vermont.																			
	Muskegon.			Saginaw, W.S.			Cleveland.			Lima.			Sandusky.			Toledo.			Erie, Pa.			Buffalo.			Canton.			Rochester.			Syracuse.			Burlington.			Northfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.						
1...	61	44	62	42	47	43	53	43	64	30	55	45	61	42	53	48	52	46	50	44	57	46	51	45	57	46	56	45	57	46	56	45						
2...	62	45	64	34	53	42	56	43	67	34	58	42	65	43	57	49	55	45	53	46	55	44	57	46	55	43	56	43	57	46	55	43						
3...	64	46	61	36	58	40	53	43	67	46	60	44	61	48	55	49	52	47	54	46	55	50	53	46	52	42	53	36	52	42	53	36						
4...	63	42	63	38	59	42	59	49	65	41	60	51	50	43	58	50	59	50	61	42	61	47	60	41	60	36	56	35	56	35								
5...	60	38	66	38	61	40	60	49	67	40	63	50	63	50	60	47	65	43	66	40	63	41	63	42	67	35	65	29	65	29								
6...	62	30	73	37	70	43	61	47	72	40	63	46	67	46	63	46	65	48	65	45	67	43	65	43	69	40	68	32	68	32								
7...	60	36	77	39	72	41	65	46	75	44	66	49	69	45	65	46	64	53	69	46	72	45	68	49	68	46	70	38	68	38								
8...	45	36	81	37	74	46	70	49	78	43	70	53	73	54	67	49	73	52	75	50	77	47	75	48	75	46	76	39	76	39								
9...	76	42	78	43	66	49	80	53	80	46	75	53	75	53	79	53	81	56	78	43	81	52	78	52	76	47	79	44	79	44								
10...	60	54	73	54	67	54	76	55	70	57	76	55	71	54	78	60	79	63	81	48	80	54	70	61	81	46	80	37	80	37								
11...	56	36	60	41	57	41	62	42	60	43	58	41	54	41	62	49	66	51	75	56	65	52	67	52	75	54	70	44	70	44								
12...	36	30	43	31	41	34	42	33	56	39	41	34	41	34	49	35	53	38	56	38	52	37	56	37	65	43	64	43	64	43								
13...	41	29	35	31	41	31	42	32	46	31	44	32	44	32	41	33	41	32	38	33	39	35	39	33	46	33	48	29	48	29								
14...	41	34	48	30	40	31	50	39	50	40	48	40	49	39	51	41	52	35	52	33	53	36	55	38	50	36	56	36	56	36								
15...	46	40	46	31	41	33	47	37	57	46	47	35	48	32	46	35	47	38	51	36	50	38	49	40	51	40	52	30	52	30								
16...	45	40	50	32	43	34	47	38	48	35	48	37	50	37	49	37	47	38	46	35	48	37	49	39	47	35	45	29	45	29								
17...	54	36	54	30	42	34	49	39	51	36	52	38	54	38	47	40	48	38	54	36	50	39	46	40	45	39	43	38	43	38								
18...	45	34	52	37	43	33	47	41	54	30	47	38	50	39	44	39	44	38	45	31	42	35	44	36	48	38	45	32	45	32								
19...	47	40	48	26	42	33	47	35	52	27	48	33	49	33	47	37	44	36	39	29	44	34	42	36	41	36	38	35	41	35								
20...	53	36	56	28	49	34	59	33	56	33	54	34	53	36	52	34	50	33	43	24	45	35	48	34	48	29	47	23	47	23								
21...	51	46	57	45	49	43	63	52	69	50	69	54	67	53	64	49	62	42	53	27	62	36	55	35	49	25	45	21	45	21								
22...	50	39	51	41	45	35	56	47	63	44	56	47	54	44	53	44	54	41	53	40	54	42	53	43	54	39	53	45	53	45								
23...	44	37	44	34	35	31	47	38	52	35	47	37	44	34	44	36	41	38	43	33	44	39	44	39	49	41	48	38	48	38								
24...	42	36	46	31	38	28	41	36	52	33	40	35	44	34	39	32	38	33	38	33	39	32	33	31	41	36	41	35	41	35								
25...	49	38	49	27	39	33	49	34	51	30	50	31	50	31	50	34	48	31	45	30	47	30	44	34	41	30	38	26	41	26								
26...	54	36	62	39	52	37	64	44	64	38	64	42	64	40	60	46	56	44	52	38	58	40	58	37	47	32	46	26	46	26								
27...	49	38	49	31	40	30	53	39	57	40	53	39	49	35	55	40	56	36	54	38	56	39	55	43	56	31	56	31										
28...	40	33	40	28	33	26	41	36	46	27	43	33	43	32	42	35	38	33	38	33	39	34	39	33	43	34	42	27	42	27								
29...	42	36	40	20	40	22	43	37	47	24	42	30	42	29	42	34	38	29	35	26	37	28	35	30	32	27	35	30	32	27								
30...	59	39	68	34	49	38	64	38	68	39	66	41	67	39	60	34	52	32	46	21	45	26	43	23	38	24	39	20	40	20								
31...	64	45	71	46	52	36	71	49	72	42	73	49	72	48	66	54	61	52	53	32	66	45	63	39	47	26	40	22	40	22								
Mns	52.3	38.4	57.0	35.1	49.6	36.7	55.7	41.7	80.5	38.2	55.9	41.5	58.5	40.5	54.8	42.6	54.2	41.6	53.4	37.3	54.7	39.9	54.1	40.2	54.1	38.2	52.9	33.4										